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Journal of Land, Resources, & Environmental Law

2002

22 J. Land Resources & Env'tl. L. 41

LENGTH: 16393 words

ARTICLE: 'TRU' Cooperative Regulatory Federalism: Radioactive Waste Transportation Safety in the West

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SUMMARY:

... This article critiques the policy of state, federal, local, and quasi-governmental regulation that has evolved to govern the transportation of radioactive waste over highways in the United States. ... Part IV explains the current approach to cooperative regulation that is being implemented for the highway transportation of one category of radioactive waste, termed "Transuranic Waste" (TRU). ... Human-made radiation emanates from the nuclear fuel cycle (discussed below) and from industrial and medical uses of radioactive materials. ... For example, in the commercial nuclear fuel cycle, radioactive material must be transported between several locations including the uranium mine, the refinery, a conversion plant, an enrichment plant, a fuel fabrication center, the reactor, a fuel storage location and the reprocessing plant. ... A. The Evolution of Radioactive Waste Transportation Regulation ... Throughout the late 1970s and early 1980s, however, confusion and conflict between state, local and federal governments over their respective roles in the cooperative regulation of radioactive waste transportation safety continued to evolve. ... " Recently, the CVSA's pilot study has been broadened to include unspecified radioactive waste shipment campaigns beyond the WIPP program. ... Despite this potential improvement, the overlapping, and perhaps conflicting, quasi-governmental and multi-governmental regulation of radioactive waste transportation safety remains troubling. ... Finally, to ensure effectiveness, the people should have access to courts via citizen suits to enforce radioactive waste transportation safety regulations. ...

TEXT:

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I. Introduction

This article critiques the policy of state, federal, local, and quasi-governmental regulation that has evolved to govern the transportation of radioactive waste over highways in the United States. Its goal is not to analyze the universe of current and potential technical and political solutions to the problem of safe highway transportation in the context of increasing radioactive waste shipments. Instead, it will evaluate one narrow aspect of this topic: the current plan of cooperative, quasi-governmental regulation that is being implemented for military radioactive waste shipments bound for the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico.

At the outset, it is important to note that the current WIPP transportation plan establishes at least two important precedents. First, since WIPP is the sole geologic repository for radioactive waste in the United States that is designed to be permanent, the transportation and regulatory systems that evolve for WIPP are likely to serve as models for future repositories inside the United States. Second, the WIPP model is likely to be viewed as a model for repository-related regulation outside the United States, especially in countries composed of confederated states and economically integrated entities like the European Union.

To underscore the importance of WIPP's precedent, Part II explains the source and effects of radioactive waste. Part III presents a brief time-line illustrating the evolution of cooperative regulation among the state, local and federal governments in the United States. Part IV explains the current approach to cooperative regulation that is being implemented for the highway transportation of one category of radioactive waste, termed "Transuranic Waste" (TRU).ⁿ¹ Part IV also examines the mechanism of cooperation among competing federal regulatory agencies and non-governmental, or quasi-governmental, entities - specifically the Western Governors' Association (WGA). Finally, Part V considers whether current forms of cooperative regulation are appropriate for the materials and activities regulated, and what improvements to the system might be beneficial.

I conclude that the devolution of federal power to regulate radioactive waste transportation to quasi-governmental entities like the Western Governor's Association is a dangerous experiment. A regulatory system that allows the governors of one state to determine the level of safety of people in other states [*43] violates the premise of state, federal, and individual relations embodied in our federal Constitution. A "TRU" cooperative federalism - one that achieves a proper coordination between state, federal, and local authorities and the public - will likely require legislative reform to impose consistent, enforceable policies and to mandate public accountability. And, while recently enacted legislation clarifies the authority of the EPA to enforce its transportation safety rules, truly effective regulation will require the accountability that comes from public participation in the regulatory and enforcement processes.

II. Radioactive Waste

A. Policy Context

Since the beginning of the nuclear weapons programs of the 1940s, the United States has grappled with the problem of nuclear waste disposal.ⁿ² Nuclear waste is the inevitable byproduct of both nuclear power and nuclear weapon production.ⁿ³ The disposal of radioactive waste presents unique technical problems for two reasons. First, exposure to radioactive waste is an extreme health hazard to both exposed individuals and their offspring.ⁿ⁴ Second, radioactive waste can remain dangerous for hundreds of thousands of years.ⁿ⁵

Scientists have studied the effects of human exposure to ionizing radiation since the first experiments with atomic energy. These studies have been undertaken amid controversy, examining, for example, radiation-related health problems of workers at nuclear weapon production facilities and public health impacts of nuclear power plant accidents at Three Mile Island and Chernobyl. Recently, with the investigation of two permanent geologic repositories for nuclear waste disposal in the United States (the WIPP Plant in New Mexico, and another plant scheduled to open soon at Yucca Mountain, Nevada), potential exposure from nuclear waste disposal is adding a new dimension to this ongoing controversy.

The disposal dimension of the radiation health debate has the potential to overshadow previous debate for several reasons. First, a small number of national nuclear waste repositories will require a massive cross-country transportation network. Until recent years, most military and commercial nuclear waste has been stored on-site, at or near the facility where it was generated. Thus, in the future, as full-scale transportation to permanent disposal sites begins, a greater number of communities around the country will be introduced to nuclear waste than ever [*44] before. Next, a cost-benefit analysis in communities along a transportation route will usually justify opposition to any transportation plan. Whatever modest benefits will result from a nuclear waste transportation plan, they will likely be outweighed by both the real threat of damage and disease from a nuclear accident and the stigma that may attach to communities hosting radioactive cargo.

B. Effects of Radiation

There are two main categories of ionizing radiation that can produce detrimental effects: (1) background radiation; and (2) human-madeⁿ⁶ radiation. Background radiation is naturally occurring radiation from the sun and from gasses and minerals on earth.ⁿ⁷ Although high-level radiation occurs rarely in nature,ⁿ⁸ most natural radiation on earth is low-level. Human-made radiation emanates from the nuclear fuel cycle (discussed below) and from industrial and medical uses of radioactive materials.ⁿ⁹

Either of these categories of radiation can have detrimental effects on humans if the elements have an atomic number of 83 or more. At that level, the elements are unstable or "radioactive," which means that their atoms can spontaneously eject or "radiate" particles and energy from their nuclei. When this occurs, the health effects have been described as follows:

Radiation can penetrate our bodies if we are exposed to radioactive substances. Beta particles can pass through the skin to damage living cells, although, like alpha particles, which are unable to penetrate this barrier [the skin], their most serious and irreparable damage is done when we ingest food or water - or inhale air - contaminated with particles of radioactive matter.

Radiation harms us by ionizing - that is, by altering the electrical charge of - the atoms and molecules comprising our body cells Even the smallest (measured in millirems) dose can affect us, for the effects of radiation are additive.

... .

A dose of 600 rems (Roentgen Equivalent Man) or more produces acute radiation illness. Thousands of Japanese A-bomb victims died from this sickness within two weeks of the bomb explosions. Such exposure to radiation kills all actively dividing cells in the body: hair falls out, skin is sloughed off in big ulcers, vomiting and diarrhea occur, and then, as the white blood cells and platelets die, victims expire of infection and/or massive hemorrhage.

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Lower doses of ionizing radiation can cause leukemia five years after exposure; cancer, twelve to forty years later; and genetic diseases and abnormalities in future generations. ⁿ¹⁰

As the final paragraph of this passage suggests, radiation can cause two kinds of effects in living organisms - cancer (a carcinogenic effect) and genetic mutations (a mutagenic effect). ⁿ¹¹ The following describes in more detail these effects and their mechanisms:

If our bodies are gamma-irradiated from the exterior, or if we inhale a particle of radioactive matter into our lungs and one of its atoms emits an alpha or beta particle, this radiation can collide with a regulatory gene and chemically damage it... . The surviving cell continues to function normally, until one day, five to forty years later[], instead of dividing to produce two new cells, it goes berserk and manufactures billions of identically damaged cells. This type of growth, which leads to the formation of a tumor, is called cancer.

... .

In addition to giving rise to cancer, radiation also causes genetic mutations, sudden changes in the inheritable characteristics of an organism

A mutation occurs whenever a gene is chemically or structurally changed. Some body cells die or become cancerous when they are mutated; others survive without noticeable changes. A genetically mutated sperm or egg cell may survive free of cancer but can seriously damage the offspring to which they give rise. ⁿ¹²

Thus accidents from disposal of radioactive waste have the potential of causing devastating effects on individuals and communities. ⁿ¹³

C. The Nuclear Fuel Cycle

All human-made nuclear materials are derived from some part of the nuclear fuel cycle. Each stage of the cycle emits "normal" amounts of radiation, even without accidents.ⁿ¹⁴ In addition, at each stage of the nuclear fuel cycle accidents can multiply "normal" leakage.ⁿ¹⁵ The nuclear fuel cycle can be divided into six basic stages.ⁿ¹⁶

Stage 1: Mining of Uranium Ore

[*46] In this process Uranium ore is extracted from the earth, usually through strip-mining. Uranium ore is radioactive, and both the dust from mining operations and the tailings must be disposed of properly to avoid health hazards.ⁿ¹⁷

Stage 2: Milling - Refinement of Uranium Ore

Once mined, the Uranium ore is refined to produce Yellowcake, which is a more pure form of uranium. Yellowcake is the raw material for nuclear fuel.

Stage 3: Fuel Fabrication - Conversion, Enrichment, and Fabrication

In this process, the Yellowcake is further refined and encapsulated into pellets of nuclear fuel.ⁿ¹⁸

Stage 4: Fission Power Production

The nuclear fuel is then used in a fission reaction in which matter is converted into energy.ⁿ¹⁹

Stage 5: Disposal

The spent fuel, its containers, and even the power plant itself become radioactive waste and eventually require disposal.ⁿ²⁰

Stage 6: Weapon Production

Finally, the highly radioactive byproducts of fission may be further reprocessed to form nuclear weapons. The raw materials for weapon production can come from either a civilian nuclear power reactor or from a specially designed military reactor. Like power plant waste, the waste from weapon production eventually requires disposal.ⁿ²¹ Both "normal" emissions and releases from accidents in every stage of the nuclear fuel cycle have had catastrophic effects on human health and the environment.

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D. Nuclear Waste Transportation

The potential for accidents and emissions is increased because each stage of the cycle can require transportation of nuclear materials. For example, in the commercial nuclear fuel cycle, radioactive material must be transported between several locations including the uranium mine, the refinery, a conversion plant, an enrichment plant, a fuel fabrication center, the reactor, a fuel storage location and the reprocessing plant. In addition, radioactive waste must ultimately be transported from each of those locations to a disposal site.ⁿ²²

Moreover, world-wide, radioactive waste "volumes are increasing as more nuclear power plants are placed in operation, current nuclear facilities are decommissioned, and the use of radionuclides increases."ⁿ²³ The same waste proliferation problem looms in the United States, even if nuclear

power plant construction does not resume. Further, increasing volumes of waste will bring an increasing need for waste transportation. Thus, as a Worldwatch Institute report concluded, "Even if no more nuclear waste is created, addressing that which already exists will require attention and investments for a period that defies our usual notion of time No matter what becomes of nuclear power, the nuclear age will continue for a very long time." ⁿ²⁴

III. Cooperative Regulation - A Brief History

As discussed in Part IV below, transportation of radioactive waste is subject to a regulatory scheme that involves overlapping authority of the federal government, state governments, and quasi-governmental entities. It is therefore useful to understand the evolution of cooperative regulation and federalism, and the application of these concepts to environmental regulation.

A. The Evolution of "Cooperative Federalism"

In the beginning of our nation's history, according to the traditional Madisonian interpretation, the Articles of Confederation failed because they allowed the states to discriminate against each other in trade. ⁿ²⁵ Thus, in 1789 when the Constitution replaced the Articles, the Commerce Clause prohibited the [*48] states from regulating interstate commerce, even where Congress had not. ⁿ²⁶ Exceptions to this "Dormant Commerce Clause" limitation were available only for narrow, traditional state police powers. ⁿ²⁷

As the country and the Constitution evolved, the notion of federalism also evolved. A shift toward state power occurred with the ratification of the Eleventh Amendment, ⁿ²⁸ which prohibited suits against states in federal court for money damages. The Civil War amendments, by contrast, constituted a diminution of states' power by federal authority to regulate discrimination. ⁿ²⁹

Further expansions of federal authority occurred between the New Deal and Great Society eras with the creation of federal executive branch agencies in the form of what some scholars considered a "combative federalism." ⁿ³⁰ While the federal government was busy with "combative" programs that some considered an invasion of state authority, some state and local governments were creating a new "cooperative federalism" by adopting federal standards in their own "'ancillary' adoptive legislation." ⁿ³¹

B. Modern Cooperative Federalism in Environmental Law

Like the law of federalism in the United States generally, American environmental law has its own specific history of evolving relations between state and federal governments. Professor John Kincaid divides today's environmental regulation into three categories according to the mode of interaction between state and federal governments:

Essentially, Congress has taken three intergovernmental approaches to environmental regulation: cooperative, conjoint, and national. In the cooperative approach, Congress seeks to stimulate state and local action based on plans approved by federal officials and implemented by state and local governments, usually with federal grant incentives and with state and local administrative discretion. In conjoint programs, Congress (or the relevant executive agency) establishes precise standards that must be implemented by state and local governments through an approved plan. State and

local officials have limited discretion, and inadequate regulation triggers direct federal enforcement. The [*49] national approach precludes state and local action. Most federal environmental statutes fall into the conjoint category, although the trend has been to tighten federal regulation in conjoint programs. ⁿ³²

These factors suggest cyclical shifts in the balance of powers, between federal state and local governments. ⁿ³³

These shifting cycles in environmental law, however, do not occur in a vacuum. President Ronald Reagan, for example, promised another "New Federalism." ⁿ³⁴ Unlike the "adoptive" "cooperative federalism" of the New Deal era, this modern "cooperative federalism" was designed to "devolve" federal regulatory authority to state and local governments. ⁿ³⁵

In the mid-1990s, as federal executive branch policy continued to devolve environmental authority to the states, and as Reagan appointees exerted their influence on the judicial branch, the Supreme Court's view of Congressional power changed accordingly. ⁿ³⁶ Evidence of a change in the Court's New Federalism view has appeared primarily in three fields of Constitutional law: (1) the Commerce Clause; (2) the Tenth Amendment; and, most recently, (3) the spending power. ⁿ³⁷

1. Commerce Clause

Traditionally, Congress has used its Commerce Clause power to regulate three modes of commerce-related activity: (a) channels of interstate commerce; (b) instrumentalities of, and persons or things in, interstate commerce; and, (c) activities substantially affecting interstate commerce. ⁿ³⁸ The Court in *United States v. Morrison* restricted the third mode, ⁿ³⁹ holding that traditional state police [*50] powers like "the suppression of violent crime and the vindication of its victims," are categorically excluded from regulation, regardless of any aggregate effects of an activity on commerce. ⁿ⁴⁰ Congress can create federal civil and criminal causes of action in these traditional state areas only by limiting its legislation to the first two modes of regulation by making a specific commerce nexus either an element of proof or a prerequisite in a separate jurisdictional provision. ⁿ⁴¹

In *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers* ⁿ⁴² the Court, indicata, recently noted "significant constitutional questions raised by" the application of the Corps rules governing isolated wetlands: "Permitting respondent to claim federal jurisdiction over ponds and mudflats falling within the 'Migratory Bird Rule' would result in a significant impingement of the States' traditional and primary power over land and water use." ⁿ⁴³

2. Tenth Amendment

In recent years the Court has breathed life into the Tenth Amendment's limits on Congressional power. For example, in *Printz v. United States*, ⁿ⁴⁴ the Court invalidated the portion of the Brady Act that required local police to conduct computerized background checks. The Court held the provision constituted impermissible "conscripting" of local officials into service in a federal regulatory program. ⁿ⁴⁵

In *Reno v. Condon*, ⁿ⁴⁶ by comparison, the Court rejected Tenth Amendment objections to federal privacy restrictions imposed on the sale of drivers' license data, despite the time and effort required of state employees to implement the Driver's Privacy Protection Act of 1994. The Court held the Commerce Clause authorized the Act, in part because "the information is ... used in the stream

of interstate commerce by various public and private entities for matters related to interstate monitoring." ⁿ⁴⁷ The Tenth Amendment did not bar the Act because it [*51] regulated the States "as owners of databases." ⁿ⁴⁸

Likewise, in the context of environmental regulation, the Commerce Clause should authorize federal regulation of environmental and safety data, if it is used for public or private "interstate monitoring;" and, the Tenth Amendment should not bar federal regulation if it applies to the states "as owners of databases." But, aside from exceptions for *Reno v. Condon*-type environmental and safety data regulation, *Printz* creates a continuing impediment to federal regulatory authority over the environment and public safety.

3. Spending Power

Congress frequently attaches conditions to its appropriations, which have proven effective substitutes for actual federal intervention. Instead of imposing a federal minimum drinking age by legislation, for example, Congress accomplished the same result by threatening the loss of highway funding for any state defying its wishes. ⁿ⁴⁹ Still, "there are limits on the power of Congress to impose conditions on the States pursuant to its spending power." ⁿ⁵⁰ In particular, "conditions on federal grants might be illegitimate if they are unrelated to the federal interest in particular national projects or programs." ⁿ⁵¹

Considering the Court's broad view of traditional local police powers in *Morrison*, difficult questions will likely arise as Congress continues to tie substantial funding to compliance with the federal environmental laws. ⁿ⁵² The New Federalism approach to the spending power, if it is adopted by the Court, would represent a further shift away from a federal regulatory role in environmental and safety programs.

[*52] Together, the Court's recent Constitutional decisions represent a trend toward narrowing federal regulatory power in cooperative, conjoint, and national programs, including those governing the environment and public safety such as radioactive waste transportation. Overall, the New Federalism philosophy of cooperative regulation is embodied in the language of the Supreme Court's opinion in *New York v. United States*, "Where Congress encourages state regulation instead of compelling it, state governments remain responsive to the local electorate's preferences; state officials remain accountable to the people." ⁿ⁵³ As I will conclude, however, the variety of cooperative regulation being applied to WIPP shipments goes beyond even the tightened federal role of this Reagan-era New Federalism.

IV. Cooperative Regulation in the WIPP Transportation Safety Program

A. The Evolution of Radioactive Waste Transportation Regulation

Federal regulation of transportation safety and radioactive materials handling evolved simultaneously throughout the early-and mid-twentieth century. In 1933 an evolving "patchwork" of conflicting state laws governing transportation prompted Congress to create the Interstate Commerce Commission (ICC). ⁿ⁵⁴ A cabinet-level Department of Transportation (DOT) was created in 1968 to replace a specialized ICC Bureau regulating interstate transportation. ⁿ⁵⁵ For more than a decade, the Atomic Energy Commission (AEC) maintained exclusive regulatory control over radioactive materials. ⁿ⁵⁶ In the 1950s, however, the AEC transferred some responsibility for radioactive materials

handling into private hands, and thus in the 1960s the AEC became a regulatory agency for private nuclear activities.ⁿ⁵⁷ The DOT and the AEC began coordinating their regulatory activities in 1973 with a Memorandum of Understanding dividing their responsibilities for shipping rules and container standards.ⁿ⁵⁸

In the past, most academic discourse addressing radioactive waste transportation trivialized the risks associated with radioactive materials shipments on the highways. Supporters noted that radioactive materials shipments represented only a small number of hazardous materials "incidents" reported to [*53] the DOT.ⁿ⁵⁹ They emphasized the comprehensive nature of safety regulations governing shipments:

The public is concerned about the transport of radioactive wastes, but isotopes, spent fuel, and other wastes are routinely transported in specially designed containers able to withstand conceivable accidents.

A legal structure exists to manage wastes safely, involving environmental protection standards, licensing and regulation by the federal government and the states, and laws governing the schedule of events.ⁿ⁶⁰

Early texts addressing radioactive waste management emphasized the need for "special" transportation regulations: "The operator must abide by special transport and packaging regulations."ⁿ⁶¹ The federal government began implementing separate transportation regulations for radioactive materials in the 1950s because of "concern ... for the fogging of photographic film transported in the proximity of radioactive materials."ⁿ⁶² These regulations evolved toward standards in the early 1980s designed to maintain "radiation exposures from transportation ... as low as reasonably achievable."ⁿ⁶³

These "as low as reasonably achievable" (ALARA) standards were criticized as insufficient to protect transportation workers.ⁿ⁶⁴ Nevertheless, like academic supporters, some state officials continued to trivialize transportation risks by relying on their supposedly rigorous safety procedures and assumed federal oversight. For example, in the late 1970s the National Conference of State Legislatures promulgated a "Ten-Point Plan for Nuclear Waste Management."ⁿ⁶⁵ This plan was based, in part, on the assumption that the federal government would compile "monitoring information both at the [disposal] facility site and along transportation corridors," and that the states would have access to this "monitoring information."ⁿ⁶⁶ As a supplement to federal oversight, the states expected "extensive state participation [would] be central to acceptable facility [*54] siting and waste transport."ⁿ⁶⁷

Throughout the late 1970s and early 1980s, however, confusion and conflict between state, local and federal governments over their respective roles in the cooperative regulation of radioactive waste transportation safety continued to evolve.ⁿ⁶⁸ In addition, in the early 1980s, the relationship between federal regulatory agencies themselves also shifted, resulting in the Nuclear Regulatory Commission (NRC) sharing DOT's authority in promulgating routing regulations.ⁿ⁶⁹ By the mid-

1980s coordination among the federal agencies regulating radioactive waste transportation was summarized as follows:

Transport of all hazardous materials, including radioactive wastes, is under the regulation of the Department of Transportation. Their regulations are applicable to all aspects of waste handling to final disposal, including initial packaging, loading, transport, unloading, content inventory, vehicle maintenance, and safety. The Nuclear Regulatory Commission handles the regulation of highly radioactive materials during their transport and for the development of performance standards for shipments involving large quantities of materials. Safety of the waste contained and various safeguards are also the [responsibility] of the NRC Noncivilian vehicular transport is controlled by the U.S. Departments of Defense and Energy. ⁿ⁷⁰

Two further considerations added to the complexities of evolving cooperative regulation among state, local, and federal agencies. First, both the federal scheme for siting a High Level Waste disposal facility and the shared state and federal scheme for regulating Low-Level Radioactive Waste (LLRW) increased opportunities for public participation. Further, not only did the Low Level Radioactive Waste Policy Act (LLRWPA) ⁿ⁷¹ authorize public participation in siting decisions, at least one state adopted a model of "shared public authority" over LLRW, including local community representation on any facility board. ⁿ⁷² At the federal level, the Nuclear Waste Policy Act of 1982 ⁿ⁷³ required consultation with the states and authorized a limited state veto over the siting decision. ⁿ⁷⁴

Second, throughout the 1970s and 1980s many suggested "placing [*55] implementation into the hands of a quasi-public or private entity instead of a public agency." ⁿ⁷⁵ These suggestions foreshadowed what would become the transportation safety plan for WIPP.

B. Coordination, Criticism, and Current Regulation

While the cooperative regulation of radioactive materials transportation remained in flux, and despite better mechanisms for public participation in siting decisions, criticism continued. Critics complained that the DOT had inadequate enforcement capabilities to protect against accidents between sites, with only nine inspectors assigned to radioactive materials transportation safety nationwide, ⁿ⁷⁶ and a lack of any centralized accident database. For example, one critic noted:

The most severe irradiated fuel shipment accident, the Peach Bottom truck crash of December 8, 1971, does not even appear in AEC's list of operational accidents. In this accident the driver lost control of the truck on a two-lane highway. As the truck veered off the highway, the cask flew off the trailer into a field. While the driver was killed, the cask itself was undamaged. Several incidents listed in the five-year survey of accidents in transport are also not listed in that compilation. The NRC did not have a means of retrieving transport-related items from its inspection and enforcement reports until 1981. ⁿ⁷⁷

Critics likewise charged that neither the DOT nor the NRC inspected the trucks used for shipments for mechanical problems. The United States Senate concluded that DOT's mainly part-time inspectors were "often unaware of regulations involving hazardous materials;" and the National Transport-

tation Safety Board (NTSB) found that DOT "cannot conduct an effective program aimed at identifying and removing unsafe vehicles and drivers from the road."ⁿ⁷⁸

Furthermore, experience has shown that trucks carrying "low-level" waste shipments have accidents at the standard accident rate. For trucks, the accident rate is estimated at one accident in every 150,000 miles traveled. During the period from 1971 to 1985, for example, 1,034 accidents or incidents involving "low-level" waste occurred, in which 90 containers actually released radioactive [*56] materials.ⁿ⁷⁹

This prompted a 1983 publication to recommend:

The DOT should devote more attention to safety measures that fall under its jurisdiction State inspection personnel ought to be assigned some responsibility for detecting equipment failure Many more DOT hazardous material inspectors should be trained and deployed ... [and], DOT [should] ... administer standardize written tests, rather than leaving driver training entirely to the shipper.ⁿ⁸⁰

Moreover, the National League of Cities issued a report in October, 1986, echoing these oversight concerns:

Current enforcement of federal regulations needs improvement. While inspection teams for [high level waste] shipments exist at the federal level, their numbers are not sufficient for current shipments, much less the dramatic increase anticipated under the NWPA. Therefore, states and localities will probably find themselves playing an increasingly important role in enforcement activities as the number of shipments increases.ⁿ⁸¹

Criticism has likewise arisen from the implementation of the current model of coordination. Both the contractors that operate LLRW sites and their host states have been compelled to respond to violations of the transportation rules. For example, because of numerous violations of federal LLRW transportation regulations by shippers and waste generators at the LLRW site in South Carolina in the 1980s, "the state of South Carolina instituted inspection procedures with strict penalties for violations, including the possible suspension of the violator's disposal license."ⁿ⁸²

Additionally, several incidents in recent years have raised concerns about the intergovernmental coordination of radioactive materials transportation safety. Two examples of incidents in the West are illustrative. First, in November of [*57] 1996, a tractor-trailer overturned on an icy road in northern Nebraska while carrying two nuclear warheads to a decommissioning facility in Texas.ⁿ⁸³ Nebraska officials criticized the Department of Energy (DOE) for failing to follow protocols that required advanced notice about such shipments. They also raised concerns about the transportation route, which required the truck to travel in an area hours away from the nearest equipment capable of salvaging the truck from the ditch. Later, a former DOE official disclosed that the radiation monitoring equipment on the truck had been removed by order of the DOE. Apparently, in September of 1996, one of its drivers had claimed his daughter died from rare brain tumors because of his exposure to radiation at work. In response, the DOE ordered the monitors removed. Two months

later when the truck carrying the warheads crashed, the DOT had no way of knowing whether there had been a radiation leak.ⁿ⁸⁴

Second, in December of 1997 a truck experienced a leak while carrying metal boxes of moisture-laden LLRW from a DOE clean-up site in Fernald, Ohio, to a DOE disposal facility in Nevada.ⁿ⁸⁵ The leaking water was discovered by the truck driver while he was performing his own routine safety check at a truckstop in Kingman, Arizona. This type of radioactive spill is considered complicated because it involves "a transportation accident with failure of shipping containment on [a] public access highway" ⁿ⁸⁶ Although the driver reported the leak in Kingman, the DOE decided to allow several additional trucks carrying the same cargo to continue to their destination, without performing in-transit inspections. When they arrived at the Nevada disposal facility days later, leaks were found in containers on three additional trucks.ⁿ⁸⁷ Officials at the clean-up site in Ohio did not learn that leaking containers had been discovered at the disposal facility in Nevada until two months later because officials in Nevada never notified them.ⁿ⁸⁸

Outside the United States, similar radioactive transportation concerns have arisen underscoring the need for a strong regulatory program. For example, "detected surface contamination on spent fuel transport casks and vehicles in several European countries undermined heavily the credibility of plant operators [*58] and the transportation enterprise."ⁿ⁸⁹ Further, where such concerns have arisen, they have sometimes led to improvements in waste handling practices. In Britain, for instance, despite the shorter transportation distances involved than in the United States, transportation costs have apparently led to at least one decision to site a waste repository near the facility that produced the wastes.ⁿ⁹⁰ Similarly, in Finland and Sweden, high level radioactive wastes are being temporarily stored in repositories near nuclear power plants.ⁿ⁹¹ Furthermore, after a national referendum in 1980, Sweden decided to close all of its nuclear power stations by 2010, even though at the time the country drew half of its electricity from nuclear power.ⁿ⁹²

In the United States, by contrast, concerns about transportation safety have not meaningfully improved waste handling practices. Furthermore, as the regulatory system governing WIPP transportation safety will illustrate, transportation safety in the United States is now being subordinated in favor of regulatory innovation.

C. Modern Cooperative Regulation and WIPP

The cooperative regulation of WIPP transportation safety represents a novel approach to cooperative regulation. As mentioned above, WIPP is the first permanent geologic repository for radioactive waste in the United States. The overall shipment program for WIPP is summarized as follows:

The Waste Isolation Pilot Plant (WIPP) shipping campaign will include over 37,000 transuranic waste shipments to the WIPP repository in southeastern New Mexico during its 35-year operational life. These shipments, originating at ten major [DOE] sites and several smaller sites throughout the United States, will traverse at least 30 states and the land of at least 11 sovereign Tribal governments. Because of the large number of shipments, the considerable mileage to be logged, and the hazardous nature of the cargo, every reasonable precaution must be taken to ensure adequate protection of public health and the environment. Moreover, public confidence in the safety of the WIPP shipping campaign requires the highest standards of incident prevention and emergency [*59] preparedness.ⁿ⁹³

A recent WIPP Environmental Impact Statement briefly describes the mechanisms that were supposed to be used to regulate transportation safety, including the development of a DOE guidance document:

The DOE Transuranic Materials Transportation Guide (DOE 1996c) prescribes the procedures to be followed for shipping TRU waste; essentially, these are the same procedures planned earlier and reported in the Final Supplemental Environmental Impact Statement for the Waste Isolation Pilot Plant (SEIS-I) (DOE 1990). DOE personnel, the generator-storage sites, and the carriers would comply with all applicable rules, regulations, and orders pertaining to packaging, labeling, inspection, and transportation of TRU waste as issued by DOT, DOE, the U.S. Environmental Protection Agency (EPA), and NRC. ⁿ⁹⁴

A closer examination of the actual regulatory system, however, reveals a more complicated and experimental scheme of coordination between the federal government, state governments, and quasi-governmental entities.

The Western Governors' Association is an "independent, non-partisan organization of governors from 18 western states and three U.S.-flag Pacific Islands" that identifies and addresses "key policy and governance issues in natural resources, the environment, human services, economic development, international relations and public management." ⁿ⁹⁵ "Governors use the WGA to develop and advocate policies that reflect regional interests and relationships in debates at the national and state levels." ⁿ⁹⁶

The WGA has assumed the role of a frequent "commenter" in the WIPP safety program, working "for over 10 years to ensure a safe transportation system for WIPP." ⁿ⁹⁷ Yet, conspicuously, the environmental impact statements make no reference to compliance or coordination with WGA transportation rules or guidelines.

Nonetheless, in 1995, the WGA issued a large binder of regulations which it characterized as a Program Implementation Guide (PIG). ⁿ⁹⁸ The PIG contains [*60] a Memorandum of Understanding between the WGA and the Secretary of Energy, describing the history of coordination between DOE and the WGA: "The potential risks of ... transuranic waste and the complexities of transporting this waste to WIPP brought the ten western corridor states, [the DOE, and the DOT] together in 1988 to establish a set of principles and procedures for achieving [the] objective of "safe and uneventful transportation.""

In 1989, the Western Governors prepared a "Report to Congress" describing the elements of a safe and uneventful transportation program. In 1991, the [WGA] defined the programs and actions necessary to achieve a safe system, and meet the states' priorities for implementing these programs and actions in the publication "A Report to the Governors and Secretary of Energy." The Secretary of Energy agreed with the conclusions presented in the two reports, and directed the [DOE] to enter into a five-year Cooperative Agreement with WGA. Working through the Cooperative Agreement, WGA, the western states and the [DOE] developed a model program to prepare the states and local units of government, and the [DOE] to support the WIPP campaign.

The Carlsbad Area Office of the [DOE] is responsible for managing the WIPP program, including the transportation system. The DOE-Carlsbad Area Office, working with the [WGA] and the ten corridor states, has agreed to conduct this shipping campaign employing standards and procedures negotiated through the Cooperative Agreement, many of which are [more strict than] federal regulatory requirements. The elements of this program are described in the [PIG].ⁿ⁹⁹

The Program Implementation Guide has since been supplemented, and, in addition to the WGA's regulation of travel in bad weather, parking, advance notice of shipments, and routing, the DOE has now delegated additional portions of the DOT's functions to another quasi-governmental entity, the Commercial Vehicle Safety Alliance (CVSA): "DOE selected the CVSA, an organization of international officials responsible for the administration and enforcement of motor carrier safety laws, to develop the inspection and enforcement program [for WIPP]." ⁿ¹⁰⁰ The CVSA is to conduct a pilot study of transportation safety by [*61] requiring drivers to complete an interview form at the end of each trip. Notably, the CVSA is not conducting in-transit monitoring of shipments, as contemplated by state legislators and local officials.ⁿ¹⁰¹ To the contrary, its procedures are designed to "minimize the need for en route inspections."ⁿ¹⁰²

In addition, the CVSA maintains an "Industry Advisory Committee" whose purposes include to providing impartial support to CVSA, and providing "the balance needed for the rational decision making on industry issues being deliberated by federal/state regulatory members."ⁿ¹⁰³ The CVSA has no committee or process that allows input from the public for WIPP regulation.

The CVSA's final procedures were developed in a cooperative effort between CVSA and yet another quasi-governmental entity, the Conference of Radiation Control Program Directors (CRCPD).ⁿ¹⁰⁴ The primary goal of the CRCPD is to make sure radiation exposure to individuals is kept to the lowest practical level, while not restricting its beneficial uses.ⁿ¹⁰⁵

One of its working groups "recommends appropriate actions by states in areas relating to the transportation of radioactive materials."ⁿ¹⁰⁶ Recently, the CVSA's pilot study has been broadened to include unspecified radioactive waste shipment campaigns beyond the WIPP program.ⁿ¹⁰⁷ In sum, the decades-old call for quasi-governmental participation in transportation regulation has materialized in today's transportation safety program for WIPP.

Meanwhile, though, legislative alterations to the system of cooperative regulation have also continued apace, most recently with the passage of the Motor Carrier Safety Improvement Act of 1999 (MCSIA),ⁿ¹⁰⁸ which created a Federal Motor Carrier Safety Administration (FMCSA) within the DOT. Before this reform, trucking safety was regulated by the Federal Highway Administration (FHA). The new agency was created because both the trucking industry and safety advocates questioned the expertise of the FHA to oversee safety, since the FHA primarily builds and maintains highways. Although public interest advocates lobbied to move the safety program to the National Highway Traffic Safety Administration (NHTSA), they agreed with both the industry and the [*62] DOT's inspector general that the safety program should at least be removed from FHA.ⁿ¹⁰⁹

It is notable that although MCSIA will not require states - or even federal safety regulators - to implement in-transit monitoring of shipments, it does for the first time authorize the DOT's inspector general to conduct criminal investigations of violations of the DOT's motor carrier safety rules.ⁿ¹¹⁰ Thus, while nothing requires the DOT or states to monitor shipments in-transit, and while there is no express statutory authority for citizen suits to enforce the DOT's safety rules, nothing would stop citizens from filing complaints about obvious in-transit violations with the DOT's inspector general

in an attempt to initiate criminal enforcement. After an accident occurs, the inspector general now clearly possesses authority to punish violators.

Despite this potential improvement, the overlapping, and perhaps conflicting, quasi-governmental and multi-governmental regulation of radioactive waste transportation safety remains troubling.ⁿ¹¹¹

V. Evaluating Cooperative Regulation in the WIPP Transportation Safety Program

Considering the seriousness of risks involved, coupled with a growing number of WIPP shipments each year, a critical evaluation of the WGA model of cooperative regulation seems both proper and timely. Although not exhaustive of all possibilities, this Part evaluates the WGA model by comparison to five alternatives: (A) Current LLRW Siting Procedures; (B) the American Enterprise Institute Model of Experimental Federalism; (C) "creative quasi-governmental administrative structures;" (D) A "True" Cooperative Federalism; and, (E) RCRA Mixed Waste regulation.

[*63]

A. LLRW Siting

The LLRWPA expressly authorizes the NRC "to enter into agreements with the Governor of any State" to permit the state to assume some of the regulatory responsibility for LLRW.ⁿ¹¹² The Act imposes procedural prerequisites for any agreement, including notice and public comment,ⁿ¹¹³ retains the NRC's inspection authority,ⁿ¹¹⁴ and reserves its power to terminate or suspend the agreement.ⁿ¹¹⁵ Moreover, the LLRW compacts generally require express approval of their terms by the member state legislatures.ⁿ¹¹⁶ Compacts are ratified in the form of federal statutes.ⁿ¹¹⁷ Further, the LLRWPA recognizes the authority of both DOT and NRC to regulate transportation; it prohibits states and regional compacts from regulating the transportation of LLRW "in a manner incompatible with" either NRC or DOT regulations.ⁿ¹¹⁸ In exchange for the authority to regulate LLRW within a regional compact, states relinquish their Eleventh Amendment immunity from federal court lawsuits to enforce their duties under the compact.ⁿ¹¹⁹

While the WIPP transportation program ships many materials that are more radioactive than those regulated by the LLRWPA, WIPP shipments are subject to less oversight. States are only indirectly involved in the WGA program, and neither the state legislatures nor Congress directly oversees the WGA or ratifies its decisions. Moreover, there has been no apparent attempt to involve the public either nationally or within the WGA region in the PIG development process.

B. The American Enterprise Institute Model: Experimental Federalism

At least one publication from the American Enterprise Institute presents an explicit argument for experimentation in environmental regulations.ⁿ¹²⁰ In this approach, regulations are promulgated by the governmental unit most "conterminous" with the economic "externalities" associated with an environmental impact. But, whatever the level of regulation, state, local, federal, or regional, "jurisdictional competition" would be encouraged in order to promote "optimal pollution- [*64] abatement policies."ⁿ¹²¹ Thus, even where the externalities are national, federal agencies would be encouraged to experiment with such strategies as devolution to states, market-based incentives, and pollution taxes.ⁿ¹²²

The WGA approach to regulating WIPP transportation appears to follow the American Enterprise Institute model, with one addition. The WIPP PIG is regional regulation for primarily, though not exclusively, regional impacts. Since WIPP is located in a western state, and because the highway transportation routes are concentrated in the West, the WGA plan is roughly "conterminous" with WIPP's externalities. Westerners also bear the predominate risks associated with transportation to WIPP. Thus, although perhaps not conceived as such by Congress, the WGA approach is a form of experimentation or innovation.

In addition to meeting the American Enterprise Institute model of governmental innovation, however, the WGA approach adds a novel ingredient: quasi-governmental regulation. Unlike the LLRW compacts, and unlike the model set out by the American Enterprise Institute, regulation by the WGA transcends state-federal cooperation. In this experiment, nongovernmental, or at most quasi-governmental entities both generate the regulations and assign implementation authority. Unlike the LLRW compacts, none of the WGA rules is authorized by the state legislatures or the Congress - at least not explicitly. Furthermore, unlike potential state or federal agency regulations, the WGA rules are promulgated without the rulemaking and environmental impact procedures that would be required for governmental entities under either state law or federal law.

In this context, unbridled by either administrative or legislative accountability, experimentation seems inappropriate. Combining this lack of procedural protections with the dangerous materials and activities encompassed by WIPP should raise genuine concern. The area of radioactive waste highway transportation should be considered the least appropriate among all the potential media in which to conduct experimental regulation. Many highway users are disturbed at having to share the road with commercial trucks of any kind. Motorists might vigorously object to being used as unwitting guinea pigs in a much more dangerous transportation experiment involving radioactive waste shipments. Yet, far from the conservative approach warranted by the nature of the materials involved, the WGA model of "cooperative federalism" is among the boldest of imaginable experiments.

[*65]

C. Creative Administrative Structures

Professors Marshall Breger and Gary Edles recently gave some "American Perspectives" toward "creative quasi-governmental administrative structures."ⁿ¹²³ They note that such Government Sponsored Enterprises (GSEs) have been used on an ad hoc basis to resist the trend toward agency accountability when oversight is seen as a disadvantage:

Private parties have taken over a variety of public functions through "contracting out" and privatization. Public-private partnerships can also substitute for government regulation through use of industry self-audits and industry standard setting. Jody Freeman has incisively referred to regimes of "mixed administration" "in which private actions and government share regulatory roles."ⁿ¹²⁴

Professors Breger and Edles focus on two types of creative GSE structures: (1) Federal Government Corporations (FGCs), like the Legal Services Corporation, the Corporation for Public Broadcasting, and the Postal Service; and, (2) true Government Sponsored Enterprises (GSEs), such as lenders Fannie Mae, Sallie Mae, and Freddie Mac.

Public Corporations were integrated in federal government operations during the New Deal era, and they lie "close to the private-ownership side of the spectrum."ⁿ¹²⁵ "They are run by a board of directors or governors that is only partially composed of members who are appointed by the President, with the advice and consent of the Senate." Their overall advantage is that "they operate outside the structures of checks and balances and are exempt from many constitutional demands and federal statutes."ⁿ¹²⁶ Specifically, because of their independence, they enable public officials to avoid responsibility for policies made by the FGC:

Their consistency lies in their independence, which has often been a useful tool for Congress. Politicians highlight their supervision and control over the corporations when the corporation's programs are effective and when it is to the advantage of the politician, but they can also distance themselves from the entities when problems materialize.ⁿ¹²⁷

[*66] Moreover, some FGCs are exempt from the Freedom of Information Act (FOIA),ⁿ¹²⁸ the Administrative Procedures Act (APA),ⁿ¹²⁹ the National Environmental Policy Actⁿ¹³⁰ and other federal legislation designed to promote public accountability.ⁿ¹³¹ True Government Sponsored Enterprises, in contrast to FGCs, are similar to independent executive branch agencies, but with almost no government control:

GSEs, on the other hand, are private federal corporations that are subject neither to government ownership nor to significant government control. As the nature of the corporation moves closer to the private ownership end of the spectrum, the amount of control that the government wields over the corporations' activities wanes.ⁿ¹³²

These GSEs were created generally to provide financial services by creating a secondary market to promote otherwise unpopular forms of lending. None of them is subject to the FOIA, and they are exempt from other forms of federal oversight, including SEC regulations, the Federal Tort Claims Act,ⁿ¹³³ and the bankruptcy code.ⁿ¹³⁴ Like FGCs, GSEs are used as a tool by Congress to control executive branch functions:

For example, Congress uses GSEs to insulate programs from the executive branch, which ultimately has allowed Congress greater control over the entities. Although the President retains the power to appoint and remove the directors authorized by statute, he does not have the ability to remove directors that he has not appointed without specific statutory authorization.ⁿ¹³⁵

Breger and Edles conclude that because of their useful autonomous characteristics, "the existence of these quasi-governmental entities will be guaranteed into the 21st century and beyond."ⁿ¹³⁶

In its autonomy, the WGA model resembles the creative quasi-governmental enterprises described by Breger and Edles. But, despite exemptions from FOIA, NEPA, the APA, and other public accountability mechanisms, even the most autonomous of these is subject to some minimal oversight by Congress and the President. The WGA, by comparison, is exempt from not only the Presi-

dential [*67] appointment process and Congressional budgetary oversight but also public accountability. Members of the WGA are not accountable to anyone - not to their own constituents, not to their own legislatures, and not to governors outside the West. Whether a governor possesses discretion, under state law, to promulgate regulations like those contained in the WIPP PIG is beyond the scope of this article, as are questions about the WGA Governors' compliance with their own state public records laws, administrative procedure acts, and environmental policy acts. Still questions like these will continue to arise as the WIPP PIG is used as a model for cooperative regulation in the area of radioactive waste regulation and beyond.

Regardless of how these criticisms about oversight and accountability are met outside the area, radioactive waste regulation should be the last place for aggressive innovation. Even if Congress, the President, the public, and state governments could achieve oversight over the WGA, the wisdom of using quasi-governmental enterprises to regulate radioactive waste management has been seriously questioned. Noting calls "for a Radioactive Waste Authority, which would be a federally chartered public corporation," one scholar in the early 1980s convincingly argued, "this may indeed help to alleviate a number of managerial problems, but it would leave unresolved the problems that come with the rapid mobilization of effort, the intrinsic complexity of the system and issues, and the scale of the waste management program."ⁿ¹³⁷

D. A "TRU"ⁿ¹³⁸ Cooperative Federalism

Professor Joseph Zimmerman has argued that the federal legislation should return to a model of "cooperative federalism" characterized by "true" coordination:

Coordination involves both the planning and implementation of policies and programs. Planning may be carried out on a cooperative basis through genuine consultation, information exchange, and negotiations, or planning may be imposed hierarchically. Successful coordination sequentially integrates separate government programs on all planes and projects them into one overall national program, thereby maximizing resource utilization, or ensuring that individual [*68] programs are separated completely and do not overlap or conflict.ⁿ¹³⁹

Zimmerman emphasizes the need for "a partnership approach involving all concerned governments."ⁿ¹⁴⁰ He cites a lack of coordination within both the NRC's nuclear power oversight operations and the DOT's motor carrier safety operations as examples of a regulatory system needing coordination.ⁿ¹⁴¹

Under Professor Zimmerman's coordination approach, cooperation among governors to regulate radioactive waste transportation safety has a superficial appeal. But a closer examination reveals a basic flaw in the WGA approach. Coordination among state officials works where officials who share informal, discretionary power can agree about a uniform approach to exercising their discretion.ⁿ¹⁴² Thus, the National Association of Attorneys General was able to adhere to uniform guidelines for prosecutorial discretion in antitrust cases.ⁿ¹⁴³ An assembly of Governors, however, cannot effectively cooperate in an area where they do not share equivalent levels of discretion.ⁿ¹⁴⁴ By attempting to regulate radioactive waste transportation safety, the WGA Governors have undertaken an effort at coordination for which none of them possesses discretion. Thus, their regulations are either ineffective or inappropriate for "devolved" federal authority.

E. RCRA Mixed Waste

The Resource Conservation Recovery Act (RCRA) provides a comprehensive regulatory structure for managing both hazardous and non-hazardous solid wastes.ⁿ¹⁴⁵ While a citizen suit is unavailable for violations of the DOT safety regulations themselves,ⁿ¹⁴⁶ RCRA authorizes citizen suits against anyone, "who is alleged to be in violation of any permit, standard, regulation, condition, requirement, prohibition, or order which has become effective pursuant to this chapter."ⁿ¹⁴⁷ Despite this, however, RCRA and the EPA rules implementing RCRA generally exclude nuclear materials from regulation as hazardous or solid wastes.ⁿ¹⁴⁸ Further, the EPA has elected to incorporate some of the DOT [*69] transportation safety regulations into the implementing rules of RCRA.ⁿ¹⁴⁹ However, the rules incorporated regulate labeling, placarding, proper containers, and reporting of discharges. As a result, they do not appear to regulate the actual safe operation of motor carriers transporting hazardous waste.ⁿ¹⁵⁰ This disconnect is explained by the EPA as follows:

The regulations set forth in parts 262 and 263 establish the responsibilities of generators and transporters of hazardous waste in the handling, transportation, and management of that waste. In these regulations, EPA has expressly adopted certain regulations of the Department of Transportation (DOT) governing the transportation of hazardous materials. These regulations concern, among other things, labeling, marking, placarding, using proper containers, and reporting discharges. EPA has expressly adopted these regulations in order to satisfy its statutory obligation to promulgate regulations which are necessary to protect human health and the environment in the transportation of hazardous waste. EPA's adoption of these DOT regulations ensures consistency with the requirements of DOT and thus avoids the establishment of duplicative or conflicting requirements with respect to these matters. These EPA regulations which apply to both interstate and intrastate transportation of hazardous waste are enforceable by EPA.ⁿ¹⁵¹

The resulting relationship gives EPA and DOT concurrent enforcement authority over those regulations incorporated in the EPA's rules. In areas not incorporated - like the safe operation of carriers transporting hazardous waste - DOT retains enforcement authority, and a citizen suit is unavailable for violations. So, for example, a citizen suit would be available for a violation involving a missing or improperly displayed placard but unavailable for a violation involving driving on unsafe roads. The EPA may have wished to avoid the added administrative expense of assuming responsibility for enforcing the safe driving rules, but in so doing, the EPA simultaneously deprived citizens of their opportunity to ensure enforcement of these safety rules.

A further practical problem is presented by the false distinction between mixed waste and radioactive waste under the RCRA transportation provision. For practical purposes, a shipment of mixed waste is indistinguishable from a shipment of radioactive waste, and both shipments are required to display the same basic vehicle placard. As a result, any distinction between the two types of shipments would be invisible without a close examination of a manifest smaller label identifying the contents of a container. In the absence of an accident or [*70] some stationary violation, a citizen witnessing a violation of the DOT safety rules would likely have no way to know if a citizen suit was available. An examination of the transporter's manifests might reveal whether a violation involved mixed waste, but the manifests might be practically unavailable until after a citizen suit is filed. Thus the citizen seeking enforcement of the safety rules would have to play a potentially ex-

pensive game of "go fish" - filing suit after suit until, by chance a violation involved mixed waste instead of radioactive waste. In other words, the DOT and EPA rules are not designed to facilitate citizen suits against haulers of either radioactive waste or mixed waste.

V. Conclusion and Recommendations

The devolution of federal power to regulate radioactive waste transportation to quasi-governmental entities is a dangerous experiment, one that has transcended the bounds of the innovations used for comparison here. The risks inherent in quasi-governmental devolution in this area are compounded by the continued lack of coordination among the federal agencies responsible for regulating highway safety of radioactive materials.

Leaving aside the many practical and policy faults in WIPP's quasi-governmental regulatory system, however, WIPP is constructed along a fundamental constitutional fault. The (Art. IV, 6), Guarantee Clause, gives the people of each state a right to a republican form of government.ⁿ¹⁵² The full text of the clause reads: "The United States shall guarantee to every State in this Union a Republican form of government[.]"ⁿ¹⁵³ In this context "republican" relates to a state where, "the supreme power is held by the people or their elected representatives."ⁿ¹⁵⁴ A constitutional defect arises in the system allowing the WGA to effectively regulate radioactive waste transportation safety because although the governors in the WGA are elected representatives, they do not represent each other's people. If policy in a given state is set in part by elected representatives of other states, then the basic requirement of the Guarantee Clause is violated.ⁿ¹⁵⁵ In Constitutional terms, therefore, the WGA is literally a "quasi-" governmental entity, one "seeming to be something but not really so."ⁿ¹⁵⁶

To achieve a true cooperative federalism in WIPP transportation safety a [*71] "TRU" cooperative federalism will require, first, coordination among federal agencies, perhaps with legislative reform, and second, a carefully considered plan for implementing all of the necessary safety functions through consistent, enforceable policies.

The enactment of MCSIA is a step in the right direction, but questions remain about the ability, and willingness, of the DOT to enforce its regulations against WIPP transporters.ⁿ¹⁵⁷ Under what circumstances could the DOE withdraw its consent to the WGA PIG? What if a newly constituted WGA decided to substantially alter the PIG procedures, to make them more restrictive or less restrictive of transportation activities? Could the DOE veto the Guidelines contained in the PIG? What happens when a trucking company violates the PIG? Do violations of the PIG serve as a basis for termination of a DOE WIPP contractor, and if so do they constitute the kind of federal action that would trigger an environmental assessment requirement under NEPA? If one governor's promulgation of guidelines for a state is rendered void because of non-compliance with the state's administrative procedures act, then is the entire PIG unenforceable against a violator? Would a violator be entitled to raise compliance with the PIG as a defense in a proceeding to enforce the DOT's safety rules?

To resolve these uncertainties, Congress should consider intervening now, before the WIPP transportation program reaches its peak volume. Specifically, Congress should consider a moratorium on all WIPP shipments until it provides: (1) public accountability and participation in the deliberations of the WGA analogous to what would be required of a federal agency under NEPA, the APA, and FOIA; and, (2) citizen suits to enforce the DOT and other safety regulations when neither the states nor the federal agencies are diligently enforcing them.

If the regulations contained in the WGA's Program Implementation Guide are important, then they should be made effective. Congress should either expressly authorize a form of cooperative regulation that holds state officials accountable, or impose pre-emptive federal regulations that work. The people should have access to this regulatory process through either state or federal administrative and environmental policy procedures, including at least one environmental assessment and impact statement procedure. Finally, to ensure effectiveness, the people should have access to courts via citizen suits to enforce [*72] radioactive waste transportation safety regulations.

Legal Topics:

For related research and practice materials, see the following legal topics:

Energy & Utilities Law Nuclear Power Industry Disposal, Storage & Transport Environmental Law-
Hazardous Wastes & Toxic Substances Radioactive Substances Federal & State Regulatory Authority
Transportation Law Carrier Duties & Liabilities Hazardous Materials

FOOTNOTES:

n1. "Transuranic waste" includes WIPP-bound waste materials (excluding high-level waste and certain other waste types) contaminated with alpha-emitting radionuclides that are heavier than uranium with half-lives greater than 20 years and occur in concentrations greater than 100 nanocuries per gram. Transuranic Waste results primarily from plutonium reprocessing and fabrication as well as research activities at U.S. Department of Energy. U.S. Dept. of Energy, Waste Isolation Pilot Plant Disposal Phase Draft Supplemental Environmental Impact Statement, at GL-17 (DOE/EIS-0026-S-2 Nov. 1996) [hereinafter DSEIS-II]; see also *id.* at AC-4.

n2. Scott Saleska, et al., *The Nuclear Legacy*, Critical Mass Energy Project, at I-1 (1989).

n3. *Id.* at III-1.

n4. See Helen M. Caldicott, *Nuclear Madness* (Autumn Press 1978); see generally John W. Goffman, *Radiation and Human Health* (Sierra Club Books 1981).

n5. Saleska, *supra* note 2, at III-2, 3.

n6. The label "man"-made is not entirely appropriate because "the principal character in the dramatic story of the long search for a method of releasing atomic energy is Dr. Lise Meitner, a woman physicist whom the Nazis expelled from Germany as a "non-Aryan." N.Y. Times, Tues. Aug. 7, 1945, at A.1.

n7. Caldicott, *Nuclear Madness*, supra note 4, at 17-18.

n8. *Id.* at 18.

n9. *Id.* at 18-19.

n10. *Id.* at 28-29.

n11. *Id.* at 30, 31.

n12. *Id.* at 31.

n13. *Id.*

n14. Saleska, supra note 2, at I-8.

n15. *Id.*

n16. Id. at III-6 to -8; see also Caldicott, *supra* note 4, at 24-39.

n17. Saleska, *supra* note 2, at IV-1 to -6.

n18. Id. at III-6.

n19. Id. at III-6 to -11.

n20. Id. at III-8 to -13.

n21. Id. at III-13 to -24. Other sources of radioactive materials include medical and academic wastes. Id. Theoretically, these materials may arise as by-products of nuclear fuel production or weapon production process. In practice, however, they are likely to be produced in research reactors located apart from nuclear power plants or nuclear weapon facilities.

n22. Nuclear Energy Agency, Organisation for Economic Co-Operation and Development, *Objectives, Concepts and Strategies for the Management of Radioactive Waste Arising from Nuclear Power Programmes* 26 (1977).

n23. Agenda 21: The Earth Summit Strategy to Save our Planet, at 230 (Daniel Sitarz ed., 1993).

n24. Nicholas Lenssen, Nuclear Waste: The Problem that Won't Go Away, *Worldwatch* Paper 106 at 48-49 (1991).

n25. See Laurence H. Tribe, *American Constitutional Law*, 6-3, at 1044 (3d ed. 2000); see also Note, To Form a More Perfect Union?: Federalism and Informal Interstate Cooperation, 102 *Harv. L. Rev.* 842, 844 (1989).

n26. *Id.* at 1044-45.

n27. *Id.* 6-4, at 1046-47.

n28. U.S. Const. Amend. XI.

n29. U.S. Const. Amends. XIII, XIV, XV.

n30. Robert M. Cover, Comment, Federalism and Administrative Structure, 92 *Yale L. J.* 1342, 1343 (1983); see also Susan Rose-Ackerman, Cooperative Federalism and Co-optation, 92 *Yale L.J.* 1344 (1983) (arguing for preservation of "cooperative" federalism grants-in-aid programs); Ben W. Heineman, Jr., The Law Schools' Failing Grade on Federalism, 92 *Yale L.J.* 1349 (1983) (arguing that "legislative" federalism is no less important than judicial federalism).

n31. Samuel Mermin, "Cooperative Federalism" Again: State and Municipal Legislation Penalizing Violation of Existing and Future Federal Requirements: I, 57 *Yale L. J.* 1, 1-3 (1947).

n32. John Kincaid, Intergovernmental Costs and Coordination in U.S. Environmental Protection, in *Federalism and the Environment: Environmental Policymaking in Australia, Canada, and the United States* 79, 86 (Kenneth M. Holland, et al. eds., 1996) (citations omitted).

n33. See Robert W. Adler, *Unfunded Mandates and Fiscal Federalism: A Critique*, 50 *Vand. L. Rev.* 1137, 1144-45 (1997) (collecting authorities ending with "regulatory federalism" during and after Reagan administration).

n34. *Id.* at 1148.

n35. *Id.*

n36. See generally Sandra B. Zellmer, *The Devil, the Details, and the Dawn of the 21st Century Administrative State: Beyond the New Deal*, 32 *Ariz. St. L. J.* 941, 967-72 (2000) (discussing Court's late Twentieth Century federalism jurisprudence).

n37. The Court recently refrained from invoking the nondelegation doctrine to reign in the EPA's authority to regulate air pollution by re-shaping the limits of Congress's Article 1, 1 legislative powers. See *Whitman v. American Trucking Associations, Inc.*, 531 U.S. 457, 470-76 (2001).

n38. *United States v. Morrison*, 529 U.S. 598, 606-07 (2000).

n39. *Id.* at 618; see also Alexander Dombrowsky, *Comment, Whether the Constitutionality of the Violence Against Women Act Will Further Federal Protection from Sexual Orientation Crimes*, 54 *U. Miami L. Rev.* 587 (2000) (asserting further federal protection for victims of sexual orientation-based violence directly depends upon the constitutionality of the VAWA). *Morrison* was foreshadowed by the Court's re-emphasis in *United States v. Lopez*, 514 U.S. 549 (1995) of "the distinction between what is national and what is local." *Lopez*, at 557

(quoting *NLRB v. Jones & Laughlin Steel Corp.*, 301 U.S. 1, 37 (1937)) (internal quotation marks omitted).

n40. *Id.* at 618.

n41. See *id.* at 612-13, 613, 1752 n.5. *Morrison* also limited Congress's enforcement power under Section 5 of the Fourteenth Amendment. The Court held the Fourteenth Amendment did not authorize the civil remedy provision of the VAWA, for three reasons: (1) it reached beyond the state action limitation to regulate purely private conduct; (2) it was not adapted to cure discrimination in the states' gender-based discrimination; and, (3) it was not geographically tailored to apply only in those states that exhibited discrimination. 120 S. Ct. at 1754-59 (rejecting Fourteenth Amendment as basis for VAWA civil remedy).

n42. 531 U.S. 159, 172 (2001).

n43. *Id.* at 173.

n44. 521 U.S. 898 (1997).

n45. *Id.* at 935.

n46. 528 U.S. 141 (2000). *Morrison*'s Commerce Clause analysis reached a similar result, concluding that VAWA impermissibly interfered with traditionally state law enforcement functions.

n47. *Id.* at 141.

n48. *Id.* at 668.

n49. See *South Dakota v. Dole*, 483 U.S. 203, 205 (1987) (describing transportation funding mechanism). Professor Sara Sun Beale, for example, suggests using the effectiveness of spending power mechanisms as a test for the need for federal criminal laws: whether "federal financial incentives that encourage state and local cooperation with federal officials and programs provide a sufficient incentive to prevent attempts to nullify federal interests." Sara Sun Beale, *Federalizing Hate Crimes: Symbolic Politics, Expressive Law, or Tool for Criminal Enforcement?* 80 *Boston U. L. Rev.* 1227, 1275 (2000).

n50. *Pennhurst State School & Hospital v. Halderman*, 451 U.S. 1, 17 n.13 (1981) (citing *National League of Cities v. Usery*, 426 U.S. 833 (1976); *Steward Machine Co. v. Davis*, 301 U.S. 548 (1937)) But see *Garcia v. San Antonio Metropolitan Transit Authority*, 469 U.S. 529, 105 S. Ct. 1005 (1985) (reversing *National League of Cities* and holding "the political process ensures that laws that unduly burden the States will not be promulgated.").

n51. *Dole*, 483 U.S. at 207 (citations and internal quotation marks omitted).

n52. See David G. Savage, *The Next Federalism Frontier: After ADA Case, States' Rights Activists May Test Congress' Spending Power*, *ABA Journal*, April 2001, at 30-31 (noting Court "ducked" spending power issue in *Alabama v. Garrett*, U.S. No. 99-1240, and that law professors, both conservatives and liberals, say the spending clause is likely to be the next frontier of federalism." *Id.*). Furthermore, any spending power approach is subject to at least a pragmatic nexus requirement. When Congress spends, it does so by definition for a national purpose that it deems important. Any threat to withhold appropriations for an important national program that is broader than an environmental initiative risks defeating the national, non-environmental purposes for which the funds are appropriated.

n53. 505 U.S. 144 (1992).

n54. Marvin Resnikoff, *The Next Nuclear Gamble: Transportation and Storage of Nuclear Waste* 147 (1983).

n55. *Id.*

n56. *Id.* at 147-48.

n57. *Id.*

n58. *Id.* at 148.

n59. See Raymond L. Murray, *Understanding Radioactive Waste* 91-92 (3d ed. 1989).

n60. *Id.* at 146.

n61. C. A. Mawson, *Management of Radioactive Wastes* 158 (1965); see also *id.* at 159 (noting existence of "federal health and transport ministries that are concerned with wastes that cross state or provincial lines.").

n62. Richard R. Rawl, *Federal Transportation Requirements for Radioactive Materials*, in *Management of Radioactive Materials and Wastes: Issues and Progress* 174 (Shyamal K. Majumdar & E. Willard Miller eds., 1985).

n63. *Id.* (emphasis added).

n64. Mary H. Melville, *Temporary Workers in the Nuclear Power Industry: Implications for the Waste Management Program*, in *Equity Issues in Radioactive Waste Management*, at 229, 234-35 (Roger E. Kasperson, ed., 1983) [hereinafter *Equity Issues*].

n65. See Roger E. Kasperson, *Social Issues in Radioactive Waste Management: The National Experience*, in *Equity Issues*, *id.* at 47.

n66. *Id.*

n67. *Id.* at 46.

n68. See *id.* at 49 (summarizing evolution of conflict over radioactive waste transportation regulation between states, localities, and federal agencies during late 1970s and early 1980s).

n69. Resnikoff, *supra* note 54, at 149.

n70. Douglas G. Brookins, *Geochemical Aspects of Radioactive Waste Disposal* 170 (1984). For a discussion of matters related to transportation regulation, Brookins refers his readers to a Department of Energy publication, Dept. of Energy, *In the matter of Proposed Rulemaking on the Storage and Disposal of Nuclear Waste*, DOE/NE-0007 (1980).

n71. 42 U.S.C. 2021b-2021d (1994).

n72. *Id.*

n73. 42 U.S.C. 10101-10270 (1994).

n74. Brookins, *supra* note 70, at 69.

n75. See Brian Cook, Critical Organization and Management Issues in Nuclear Waste Disposal, in *Problems & Prospects for Nuclear Waste Disposal Policy* 62 (Eric B. Herzik & Alvin Mushkatel eds., 1993) (citations omitted).

n76. Resnikoff, *supra* note 54, at 148; see also Ricardo Alonso-Zaldivar, Truck Crashes Claim Thousands, *The Denver Post*, Fri., July 22, 1999, at 29A-38A (noting criticisms of motor carrier safety management leading to passage of MCSIA, and noting lack of adequate inspection and enforcement in trucking safety program).

n77. Resnikoff, *supra* note 54, at 169 (citations omitted).

n78. *Id.* at 170-71 (citations omitted).

n79. Radioactive Waste Campaign, Fact Sheet: Transporting "Low-Level" Radioactive Waste 4-5. The safety record for LLRW shipments is relevant to WIPP shipments because both kinds of shipments are marked with the same vehicle placards; so, from the viewpoint of official enforcing in-transit safety rules, a violation would represent the same level of seriousness regardless of the contents of the shipping containers. *Id.* at 4 figure 2, 5 figure 4 (illustrating required vehicle placards).

n80. Resnikoff, *supra* note 54, at 374-75.

n81. Nat'l League of Cities, *Hot Stuff: Issues in the Management of High Level Radioactive Waste* 47-48 (Policy Working Paper 1986).

n82. Edward L. Gershey, et al., *Low-Level Radioactive Waste: From Cradle to Grave* 57 (1990); see also *id.* (noting "customer compliance program," including inspections of shipments, implemented by DOE facility contractor) (citations omitted).

n83. See Leslie Boellstorff, *Gov. Nelson to seek notification on Transport of Classified Cargo*, *Omaha World Herald*, Dec. 17, 1996, at 13SF.

n84. Robert Alvarez, *Energy in Decay*, *The Bulletin of the Atomic Scientist*, May/June 2000, at 24, 25.

n85. *Leaks Prompt Halt of Nuclear Waste Shipments*, *Albuquerque Journal*, Thurs., Dec. 18, 1997, at D1.

n86. Michael T. Ryan & David G. Ebenhack, *The Management of Radioactive Materials Spills*, in *Management of Radioactive Materials and Wastes: Issues and Progress* 243 (Shyamal K. Majumdar & E. Willard Miller eds., 1985) (paper by scientists overseeing South Carolina LLRW disposal facility).

n87. *Leaks Prompt Halt of Nuclear Waste Shipments*, *supra* note 85, at D1.

n88. Rachel Melcer, *Fernald Awaits Ok to Ship: Inspectors May Release Findings Within a Month*, *Cincinnati Enquirer*, July 30, 1998, at B1.

n89. W. Thomas, *Safety Issues in Established Predisposal Waste Management Practices*, in *International Atomic Energy Agency, Safety of Radioactive Waste Management: Proceedings of an International Conference, Cordoba, Spain, 13-17 Mar. 2000* at 222; see also *id.* at 225-26 (summarizing conference discussion).

n90. See Andrew Blowers, *Nuclear Waste Disposal: A Technical Problem in Search of a Political Solution*, in *UK Environmental Policy in the 1990s* at 221 (Tim S. Gray ed., 1995).

n91. Claes Bernes, *The Nordic Environment - Present State, Trends and Threats* 205 (1993); The Worldwatch Institute notes that Sweden has, "avoided major siting problems by locating both of its operating waste facilities next to power plants." Lenssen, *supra* note 24, at 40.

n92. Bernes, *supra* n.91 at 31; Lenssen, *supra* note 24, at 40; see also David Day, *The Environmental Wars: Reports from the Front Lines* 278 (1989).

n93. Western Governors' Association, *WIPP Transportation Safety program Implementation Guide*, (rev. ed. Dec. 1999), available at <http://www.westgov.org/wga/initiatives/wipp/-rev1299.htm> [hereinafter *PIG*].

n94. *DSEIS-II*, *supra* note 1, at 3-7, P 3.1.2.1.

n95. Western Governors' Association, available at <http://www.westgov.org/wga/wgaifo/mission.htm> (last visited Nov. 7, 2001).

n96. *Id.*

n97. Proposed Rules, Nuclear Regulatory Commission, 65 Fed. Reg. 44360, 44368-369 (2000); see also, e.g., Notices, Department of Energy, 57 Fed. Reg. 57170, 57173 (1992) (listing WGA among stakeholders providing input into National Compliance Plan, under RCRA, for DOE "Mixed Waste"); *id.* at 57183 (citing 1991 Memorandum of Understanding between DOE and WGA).

n98. See PIG, *supra* note 93.

n99. Memorandum of Agreement between the Western States and U.S. Department of Energy: Regional Protocol for the Safe Transport of Transuranic Waste to the Waste Isolation Pilot Plant (Approved Dec. 1, 1995), reprinted in PIG, *id.* While the PIG was designed to apply only to shipments of military waste to the WIPP facility in New Mexico, there is reason to believe that the Federal Motor Carrier Safety Administration relies on the Western Governors' Association to monitor the safe transportation of all types of radioactive materials. See Letter from Office of the Administrator to The Honorable Jim Matheson dated May 3, 2001 (on file with the author) (explaining application of WIPP parking areas and road condition protocols to non-WIPP shipment of radioactive materials).

n100. PIG, *supra* note 93, at I-1, -2 (rev. ed. May 1998). "The Commercial Vehicle Safety Alliance (CVSA) is a non-profit organization of federal, state, and provincial government agencies and representatives from private industry in the United States, Canada and Mexico dedicated to improving commercial vehicle safety. The Alliance serves as the major focal point for bringing together state/provincial officials with truck/bus industry interest and federal governments in a unique discussion and problem solving interchange." CVSA, About Us, available at [http://www.cusa.org/About Us/about us.html](http://www.cusa.org/About%20Us/about%20us.html).

n101. *Id.* at I-2.

n102. Id. at II-1.

n103. Id.

n104. PIG, *supra* note 93, 2 (rev. ed. Dec. 1999), available at <http://www.westgov.org/wga/-initiatives/wipp/rev1299.htm> (last visited Nov. 7, 2001).

n105. The Conference of Radiation Control Program Directors, Inc. (CRCPD) is a 501(c)(3) nonprofit professional organization whose primary membership is made up of individuals in state and local government who regulate the use of radiation sources. Other members include individuals with an interest in radiation protection. <<http://www.crcpd.org>> (visited Oct. 6, 2001).

n106. Id. Both the CVSA and the CRCPD websites display "members only" sections that restrict public access to information.

n107. Id.

n108. Pub. L. No. 106-159, 113 Stat. 1748.

n109. See Jeffrey S. Lubbers, *Developments in Administrative Law and Regulatory Practice 1999-2000* at 503-04 (2001).

n110. See *Truckers United for Safety v. Mead*, 86 F. Supp. 2d 1 (D. D.C. 2000) (cited in Lubbers, *supra* note 109, at 480 n. 28). See generally, Edward E. Shea, *Introduction to U.S.*

Environmental Laws, 69-71 (1995) (summarizing DOT regulation of hazardous materials, including radioactive materials, under Hazardous Materials Transportation Act, 49 U.S.C. 5101, et seq.).

n111. See Weekly WIPP Update by SRIC (Southwest Research and Information Center) at <http://www.sric.org/-Nuclear/alert/2001/021401.-htm> (last visited Nov. 8, 2001); Nuclear Waste Program Chronology of WIPP events from 1972 to 2000 at <http://www.sric.org/Nuclear/docs/-WIPPCHRON.htm> (last visited Nov. 8, 2001); Center Notes, WIPP Update: Waste Shipments to WIPP violate safety requirements [http://www.sric.org/Workbook/V25 1/-cnwipp-2000a.htm](http://www.sric.org/Workbook/V25%201/-cnwipp-2000a.htm) (last visited Nov. 8, 2001); see also Second Nuclear Shipment Heads Across Wyoming, Laramie Daily Boomerang, Aug. 24, 1999, at 8 (describing second WIPP shipment); Second Idaho Shipment Arrives - Minus Part, Laramie Daily Boomerang, Fri., Aug. 27, 1999, at 7 (noting second shipment from Idaho National Engineering and Environmental Laboratory, which was discovered missing an O-ring at an air vent on one of its containers when it reached WIPP). See generally Craig Bernardini, Nuclear Waste on Ice, Independent Media Center, May 21, 2001 (June 20, 2001) available at [http://slc.indymedia.org/display.php3?article id=473](http://slc.indymedia.org/display.php3?article%3Fid=473) (detailing complaints by the author about under-enforcement by DOT).

n112. 42 U.S.C. 2021(b) (1994).

n113. Id. at 2021(e).

n114. Id. at 2021(i).

n115. Id. at 2021(j).

n116. See, e.g., *State of Nebraska v. Central Interstate Low-Level Radioactive Waste Comm'n*, 902 F. Supp. 1046, 1049-50 (D. Neb. 1995) (noting Kansas legislature had failed to pass legislation to adopt proposed amendment as required by compact).

n117. See *Entergy, Arkansas, Inc. v. Nebraska*, 210 F.3d 887, 890-91 (8th Cir. 2000).

n118. See 42 U.S.C. 2021d(b)(3)(A) (title confers no "new authority" over transportation).

n119. *Entergy, Arkansas, Inc.*, 210 F.3d at 896-97; see generally, *Shea*, supra note 110, at 97 (summarizing regional federalism approach of LLRWPA).

n120. See Henry N. Butler & Jonathan R. Macey, *Using Federalism to Improve Environmental Policy* 33-47 (1996).

n121. *Id.* at 46.

n122. *Id.* at 40.

n123. Marshall J. Breger & Gary J. Edles, *Established by Practice: The Theory and Operation of Independent Federal Agencies*, 52 *Admin. L. Rev.* 1111, 1227 (2000). See generally Terry L. Anderson & Peter Hill, *Environmental Federalism* (1997) (addressing federalism issues primarily in the area of natural resources management on public lands).

n124. *Id.* at 1227-28 (footnotes omitted).

n125. *Id.* at 1228-32.

n126. Id. at 1231 (footnote omitted).

n127. Id. (footnote omitted).

n128. 5 U.S.C. 552 (1994).

n129. 5 U.S.C. 551-559, 701-706, 1305, 3344, 4301, 5335, 5362, 7521 (1994).

n130. 42 U.S.C. 4321, 4331-4335, 4341-4347 (1994).

n131. Id. at 1229.

n132. Id. at 1229 (footnotes omitted).

n133. 28 U.S.C. 1291, 1346(b), (c), 1402(b), 1504, 3110, 2401(b), 2402, 2411(b), 2412, 2671-2680 (1994).

n134. Id. at 1232-33.

n135. Id. at 1233 (footnotes omitted).

n136. *Id.* at 1234.

n137. Roger E. Kasperson, Social Issues in Radioactive Waste Management: The National Experience, in *Equity Issues*, *supra* note 64, at 24, 39. Another selection in the Kasperson book summarizes the fundamental distributional justice concern raised by plans to transport radioactive waste: "Inhabitants at sites and along routes are asked to bear risks so that the rest of the nation, especially the areas served by nuclear power, may benefit." Roger E. Kasperson & Barry L. Rubin, *Siting a Radioactive Waste Repository: What Role for Equity?* in *Equity Issues*, *supra* note 64, at 118, 126.

n138. See DSEIS-II, *supra* note 1, at AC-4, GL-17 for a definition of "TRU" waste.

n139. Joseph F. Zimmerman, Federal Preemption of State and Local Government Activities, 13 *Seton Hall Legis. J.* 25, 50-51 (1989).

n140. *Id.*

n141. See *id.* at 40-48.

n142. *To Form a More Perfect Union?: Federalism and Informal Interstate Cooperation*, *supra* note 25, at 848-49.

n143. See *id.*

n144. *Id.* at 849 n.30.

n145. 42 U.S.C. 6901-6987, 9001-9010 (1994).

n146. But see 40 U.S.C. 5122 (agency enforcement), 5123 (civil penalty), 5124 (criminal penalty).

n147. 42 U.S.C. 6972.

n148. 40 CFR part 261.4(a)(4).

n149. See 40 CFR part 263.10(a) Note; see also 42 U.S.C. 6923(b). This section mandates, "the regulations promulgated by the Administrator under this section shall be consistent with the requirements of" DOT's regulations. *Id.*

n150. *Id.*

n151. *Id.*

n152. U.S. Const. art. IV, 6.

n153. *Id.*

n154. Oxford American Dictionary, at 769 (Heald Colleges Ed. 1980).

n155. The Supreme Court cited Guarantee Clause scholarship in *New York v. United States*, without applying the Guarantee Clause. See *id.*, 505 U.S. 144 (citing Deborah Jones Merritt, *The Guarantee Clause and State Autonomy: Federalism for a Third Century*, 88 *Colum. L. Rev.* 1, 3-10 (1988); McConnell, *Federalism: Evaluating the Founders' Design*, 54 *U. Chi. L. Rev.* 1484, 1491-1511 (1987)). Consistent with *New York*, however, any regulatory scheme for radioactive waste must both be authorized by the Commerce Clause and permitted by "the limitations contained in the Constitution," including the Guarantee Clause. *Id.*

n156. *Oxford American Dictionary* 734 (Heald Colleges ed. 1980).

n157. In a recent letter to Congressman Jim Matheson of Utah, the FMCSA disavowed authority to enforce one of its safe driving rules against radioactive waste haulers:

The FMCSRs call for a driver to exercise extreme caution when hazardous conditions are present and require a driver to stop driving only if conditions become "sufficiently dangerous FMCSA believes that the judgment about whether conditions are sufficiently dangerous must be left to professional truck drivers, the police, and other State and local officials present

... . We rely on the State or local police, through grants from the Motor Carrier Safety Assistance Program, to ensure the safety of commercial motor vehicles as they travel on the highways.

Letter from Office of the Administrator to The Honorable Jim Metheson (July 13, 2001) (on file with the author).